

Claims:

1. A polymeric additive system comprising:

a) a liquid component, and

b) a solid component, the solid component comprising polymeric additive particles, the polymeric additive particles comprising:

(i) a first population of polymer particles, and

(ii) a second population of polymer particles,

wherein the mean particle diameter of the first population of polymer particles is at least 50% larger than the mean

particle diameter of the second population of particles, and

wherein the compositions of the polymer particles in the first and second populations are essentially the same, and

wherein the solid component is present in an amount of more than 50 weight percent, said weight percentage being based on the total weight of the polymeric additive system.

2. A polymeric additive system as recited in claim 1 wherein the solid component is present in an amount of at least 55 weight percent, said weight percentage being based on the total weight of the polymeric additive system.

3. A polymeric additive system as recited in claim 1 wherein the liquid component comprises at least 5 weight percent water, said weight percentage being based on the total weight of the polymeric additive system's liquid component.

4. A polymeric additive system as recited in claim 1 wherein the liquid component comprises essentially no water.

5. A polymeric additive system as recited in claim 1 wherein the first population of polymeric additive particles has a mean particle diameter in the range of from 10 nm to 50,000 nm.

6. A process for making a polymeric additive system comprising: a liquid component, and a solid component, wherein the solid component comprises polymeric additive particles, said process comprising at least the following steps:

- (a) providing an aqueous emulsion polymerization reaction mixture comprising a first population of polymer particles and a second population of polymer particles, wherein the polymer particles are present in an amount of at most 50 weight percent, said weight percentage being based on the total weight of the emulsion polymerization reaction mixture;
- (b) polymerizing a first group of one or more ethylenically unsaturated monomers in the aqueous emulsion polymerization reaction mixture, wherein the weight percentage of the polymer particles increases to an amount greater than 50 weight percent, said weight percentage being based on the total weight of the emulsion polymerization reaction mixture, wherein at least one of the populations of polymer particles increase in mean particle diameter, wherein the mean particle diameters of the first and second populations of polymer particles differ by at least 50%, and wherein the compositions of the polymer particles in the first and second populations are essentially the same.

7. A process for making a polymeric additive system as recited in claim 6, wherein the weight ratio of the first population of polymer particles to the second population of polymer particles are in the range of from 10:90 to 90:10.

8. A process for making a polymeric additive system as recited in claim 6, further comprising the step of:

- (c) graft-polymerizing a second group of one or more ethylenically unsaturated monomers in the presence of the first and second populations of polymer particles to provide a polymer adjacent to the surfaces of the polymer particles of the first and second populations, wherein the second group of one or more ethylenically unsaturated monomers are the same or different as the first group of one or more ethylenically unsaturated monomers of step (b).

9. A process for making a polymeric additive system as recited in claim 8, wherein the first group of monomers forms a rubbery core polymer and the second group of monomers forms a hard shell polymer.

10. A process for making a polymeric additive system as recited in claim 9, wherein the rubbery core polymer is present in an amount of from 80 to 99 weight percent, said weight percentage being based on the total weight of the rubbery core and hard shell polymers.

11. A polymeric composition comprising a polymeric component and a polymeric additive component, wherein said polymeric composition is prepared by a process which comprises at least the following steps:

(I) forming a blend comprising the polymeric component and at least one polymeric additive system, wherein the polymeric additive system comprises:

a) a liquid component, and

b) a solid component, the solid component comprising polymeric additive particles, the polymeric additive particles comprising:

(i) a first population of particles, and

(ii) a second population of particles,

wherein the mean particle diameter of the first population of polymer particles is at least 50% larger than the mean particle diameter of the second population of particles, and

wherein the compositions of the polymer particles in the first and second populations are essentially the same, and

wherein the solid component is present in an amount of more than 50 weight percent, said weight percentage being based on the total weight of the polymeric additive system.

12. A polymeric composition prepared by the process as recited in claim 11, wherein the solid component is present in an amount of at least 60 weight percent, said weight percentage being based on the total weight of the polymeric additive system.

13. A polymeric composition prepared by the process as recited in claim 11, wherein the liquid component comprises at least 5 weight percent water, said weight percentage being based on the total weight of the polymeric additive system's liquid component.

14. A polymeric composition as prepared by the process as recited in claim 11, wherein the mean particle diameter of the first population of particles is at least 100% larger than the mean particle diameter of the second population of particles.

15. A polymeric composition prepared by the process as recited in claim 11, wherein the liquid component is present in an amount of at most 50 weight percent, said weight percentage being based on the total weight of the polymeric additive system.

16. A process for making a polymeric composition comprising a polymeric component and polymeric additive particles, said process comprising at least the following steps:

(I) contacting the polymeric component with a polymeric additive system to form a blend, the polymeric additive system comprising:

a) a liquid component, and

b) a solid component, the solid component comprising polymeric additive particles, the polymeric additive particles comprising:

(i) a first population of particles, and

(ii) a second population of particles,

wherein the mean particle diameter of the first population of polymer particles is at least 50% larger than the mean particle diameter of the second population of particles, and

wherein the compositions of the polymer particles in the first and second populations are essentially the same, and

wherein the solid component is present in an amount of more than 50 weight percent, said weight percentage being based on the total weight of the polymeric additive system;

and

(II) removing at least a portion of the liquid component from the blend.

17. A process for making a polymeric composition as recited in claim 16, wherein step (I) the liquid component is present in an amount of at most 45 weight percent, said weight percentage being based on the total weight of the polymeric additive system.

18. A process for making a polymeric composition as recited in claim 16 wherein, after forming the blend, the blend is formed into an article.

19. A process for making a polymeric composition as recited in claim 16
5 wherein the polymeric component is in powder form.

20. A process for making a polymeric composition as recited in claim 16 wherein the polymeric additive particles comprise at least 10 percent by weight of a rubbery core.

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